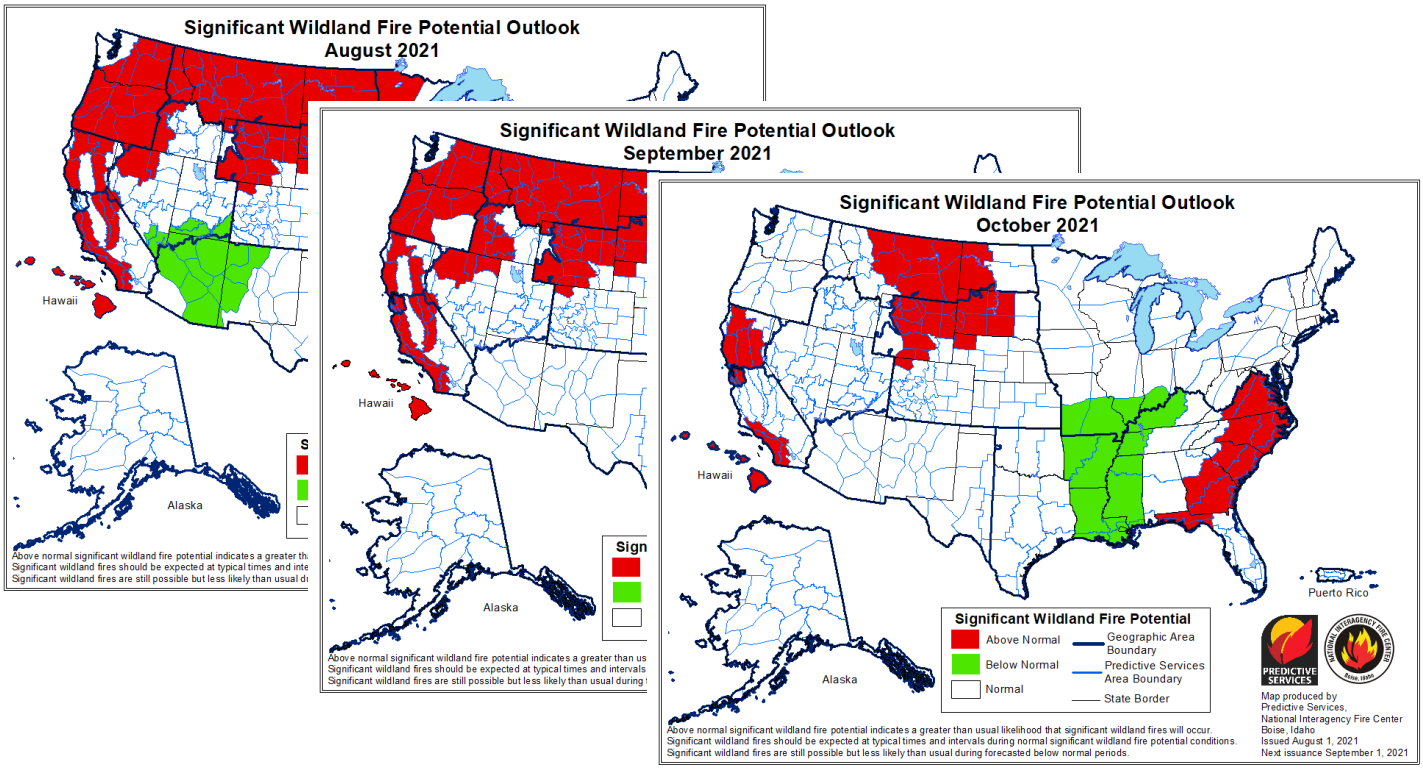
August 2021 - Wildland Fire Outlook

August *4, 2021*



Significant Wildland Fire Potential -- August, September, October 2021 (August 1 2021, National Interagency Fire Center).
https://www.predictiveservices.nifc.gov/outlooks/outlooks.htm.

SUMMARY

The Teton Interagency Dispatch area continued dry in most of July but began to receive monsoon moisture in late July and early August. These thunderstorm rains decreased our energy release component and fuel moistures yet the area remains in moderate to severe drought conditions, with temperature and precipitation outlooks for drier and warmer than normal conditions through the summer. For August through September, analyses and outlooks indicate significant wildland fire potential in surrounding areas and normal potential for most of the Dispatch area.

- On July 1, Bridger-Teton National Forest/Grand Teton National Park entered **Stage 1 Fire Restrictions, which remain in effect as of August 2.**
- **A transition to Normal fire potential** for August-October, per the Great Basin Coordination Center's monthly outlook: https://gacc.nifc.gov/gbcc/predictive/docs/monthly.pdf
- Daily GBCC Fire Potential Briefing and related outlooks: https://gacc.nifc.gov/gbcc/outlooks.php

During an average fire season, based on a 20-year fire history from 2001-2020, Bridger-Teton National Forest will average 52 unplanned fires (32 natural starts per year, and 20 human-caused fires) for an average of 16,522 acres per year. Grand Teton National Park will average 10 unplanned fires (six natural starts per year, and four human-caused fires) for an average of 1332 acres per year.

Current information on fire conditions, indices and fire activity is at www.tetonfires.com. Local, regional and national outlooks are at https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/predictive-services/outlooks.

1. 30-day and 60-day Temperatures

WARMER SUMMER. The past 30 and 60 days continued the early-summer trend for a warmer-than-normal summer. These high temperatures combined with drought may have accelerated green-up and made dead fuels more available for fire ignition and spread.

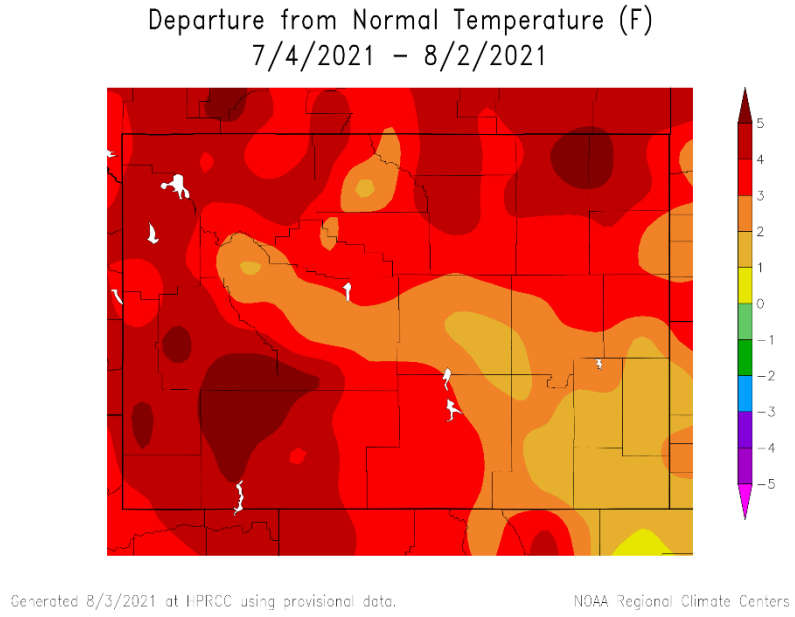


Figure 1a. Departure from Normal Temperature, Wyoming -- prior 30 days.
https://hprcc.unl.edu/products/maps/acis/hprcc/wy/30dTDeptHPRCC-WY.png.

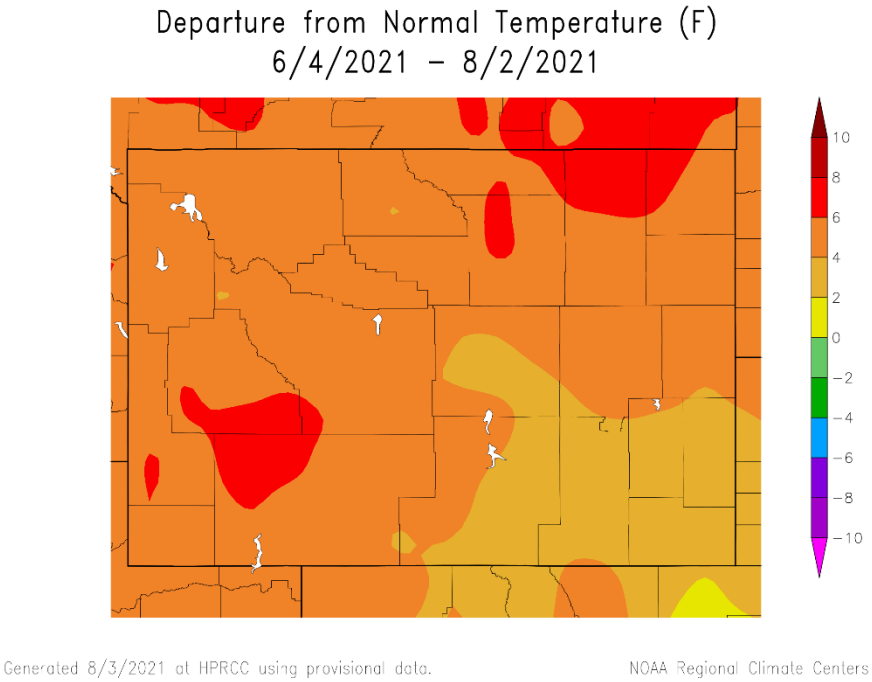


Figure 1b. Departure from Normal Temperature, Wyoming – prior 60 days.
https://hprcc.unl.edu/products/maps/acis/hprcc/wy/60dTDeptHPRCC-WY.png

2. Precipitation

Area precipitation for the past 30 and 90 days (through August 3) reflects the increased monsoon flow from the southwest, with the 30-day above-normal precipitation zones (Figure 2a) wetter when compared to the drier 90-day period (Figure 2b).

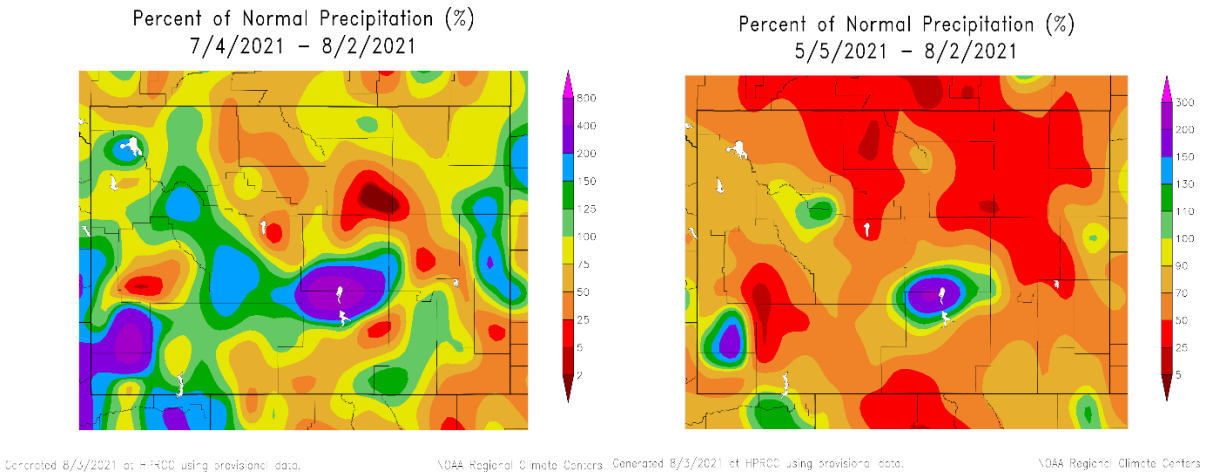
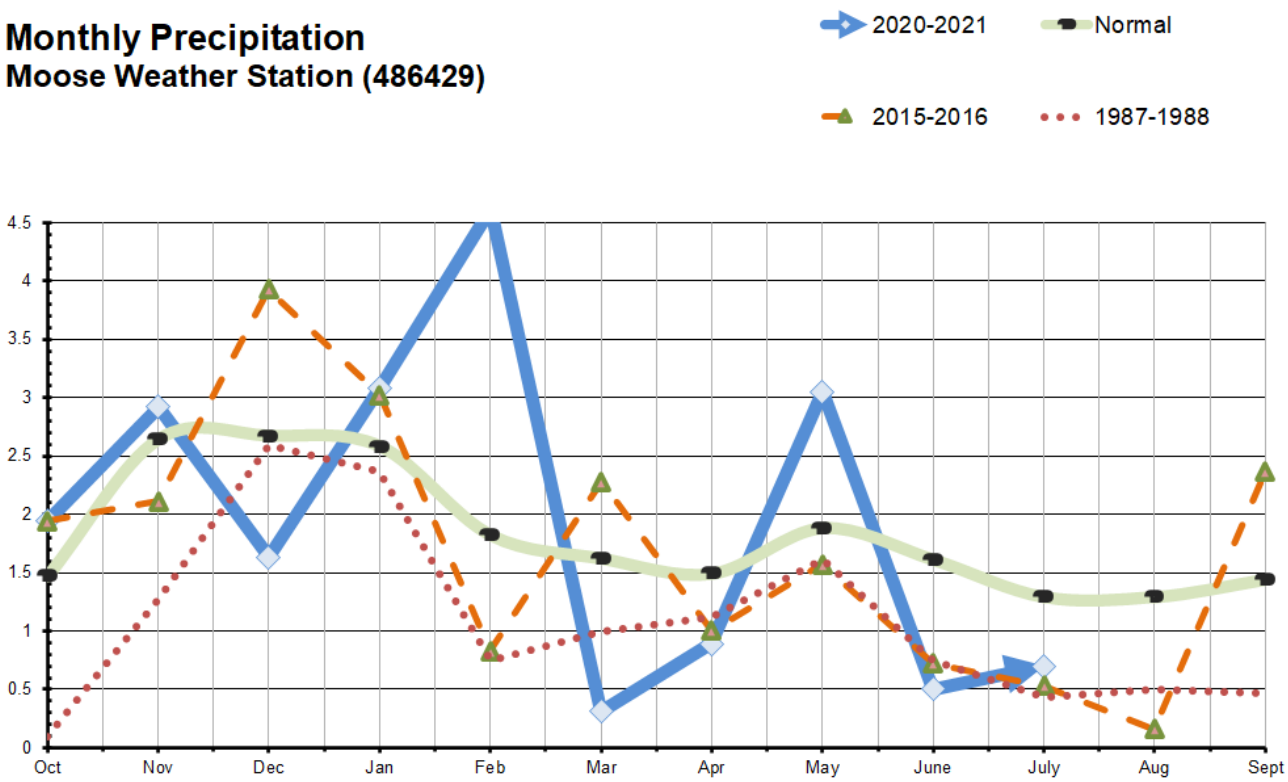


Figure 2a (left). *Wyoming, Percent of Normal Precipitation for the past 30 days. https://hprcc.unl.edu/products/maps/acis/subrgn/WY/30dPNormWY.png.* ***Figure 2b (right).*** *Percent of Normal Precipitation for the past 90 days. https://hprcc.unl.edu/products/maps/acis/subrgn/WY/90dPNormWY.png.*

Precipitation tracking at the Moose 1 NNE WY Climate Weather Station -- the automated Climate Reference Station in the Applied Climate Information System in the Dispatch area -- is representative for lower elevation sites in Grand Teton National Park and some North Zone sites. The station recorded 103% of normal for water year-to-date, with four of the past five months recording below-normal precipitation. Though May was significantly wetter than normal, precipitation for the past three months is 89% of normal and June-July received 41% of normal for 30-year precipitation norms.

Table 2 - Graph and Table: Precipitation, Moose Weather Station (Grand Teton National Park).



		Jan	Feb	Mar	Apr	May	June	July	YTD total
Precipitation	1987-88	2.37	0.75	0.99	1.12	1.61	0.75	0.43	11.97
(inches)	1999-00	2.27	5.04	1.03	0.4	1.38	0.59	0.36	13.85
	2015-16	3.02	0.83	2.28	1	1.57	0.72	0.53	17.93
	2019-20	1.49	1.88	2.58	1.82	1.62	2.9	0.43	20.82
	Normal	*1.49*	*1.88*	*2.58*	*1.82*	*1.62*	*1.61*	*1.29*	*19.07*
	2020-21	**3.08**	**4.62**	**0.31**	**0.89**	**3.06**	**0.5**	**0.7**	**19.64**
Percent of NORMAL	1987-88	92%	40%	63%	75%	84%	47%	33%	63%
	1999-00	88%	267%	66%	27%	72%	37%	28%	73%
	2015-16	117%	46%	141%	67%	84%	45%	41%	94%
	2019-20	159%	130%	150%	187%	81%	180%	33%	109%
	2020-21	**119%**	**254%**	**19%**	**60%**	**162%**	**31%**	**54%**	**103%**

3. Drought Monitor

The U.S. Drought Monitor shows 99% of the West (excluding Wyoming) in drought conditions. In Wyoming, 98% of the state exhibits some level of drought conditions, compared to 86% exhibiting drought conditions in 2020. Monsoon moisture in late July/early August offered mitigation, with warm-dry conditions expected to return through late-summer and fall. The drought is likely to intensify and increase fuel availability in 1000-hour fuels (downed logs), fine dead fuels and live fuels. Soil moisture outlooks also indicate continued drought impacts.

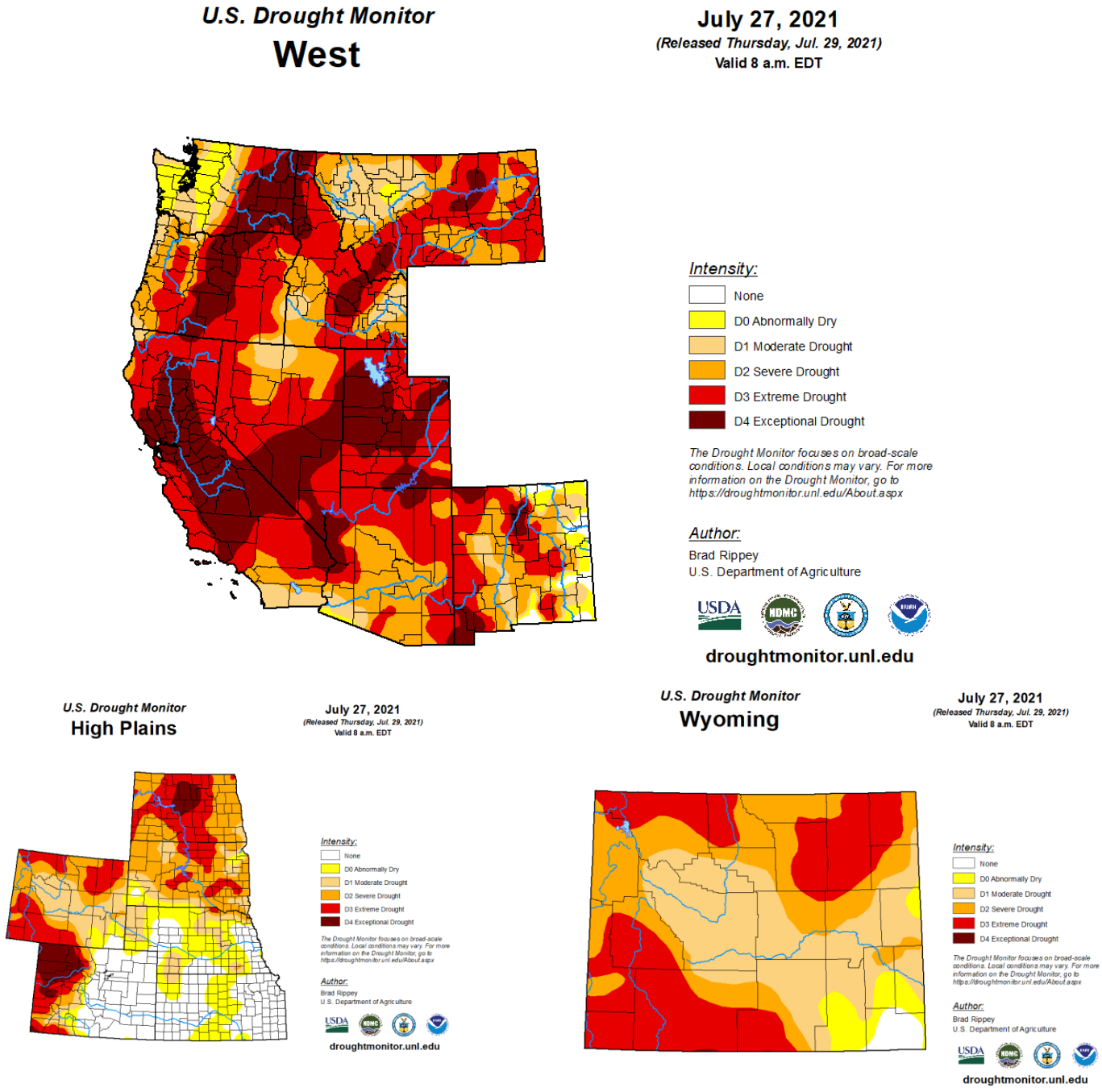
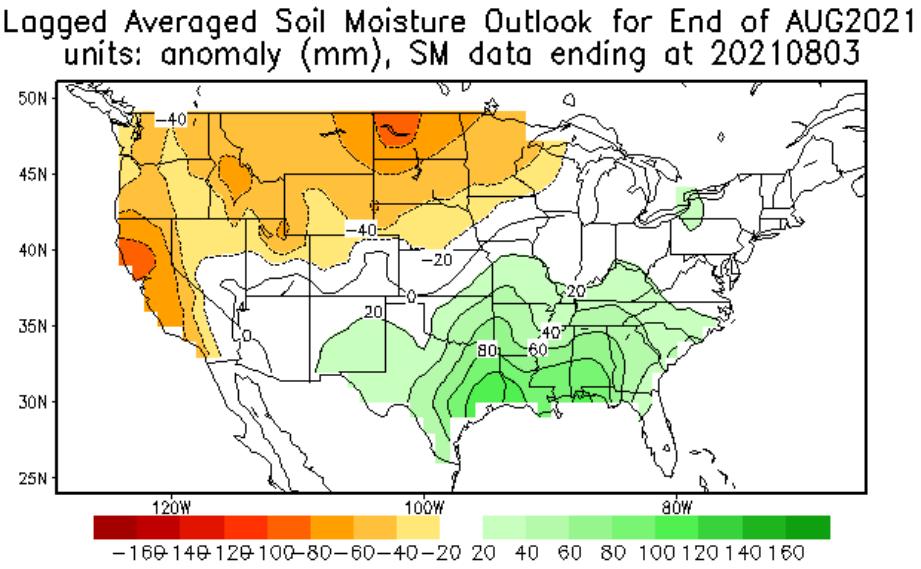


Figure 3a. U.S. Drought Monitor – West.
https://droughtmonitor.unl.edu/data/png/20210727/20210727_west_text.png.



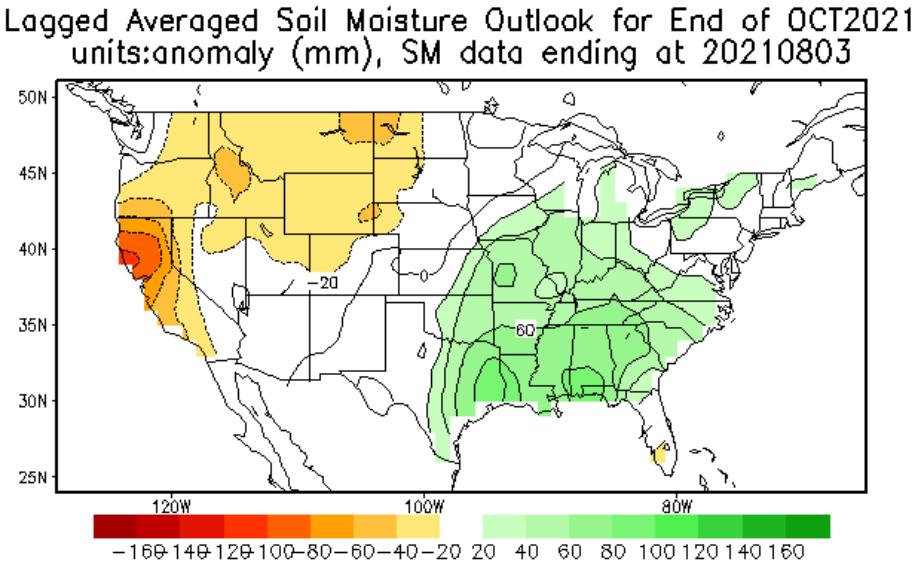


Figure 3b. U.S. Drought Monitor – USDA Northern Plains Climate Hub, current drought. [Current Map - High Plains | U.S. Drought Monitor (unl.edu)](). *Figure 3c (right). U.S. Drought Monitor – Wyoming – June 29, 2021.* [Current Map - Wyoming | U.S. Drought Monitor (unl.edu)]()

Figure 3d (above). Soil Moisture Outlook for end of July and September, 2021.
https://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/US/Outlook/CAS/SM.shtml

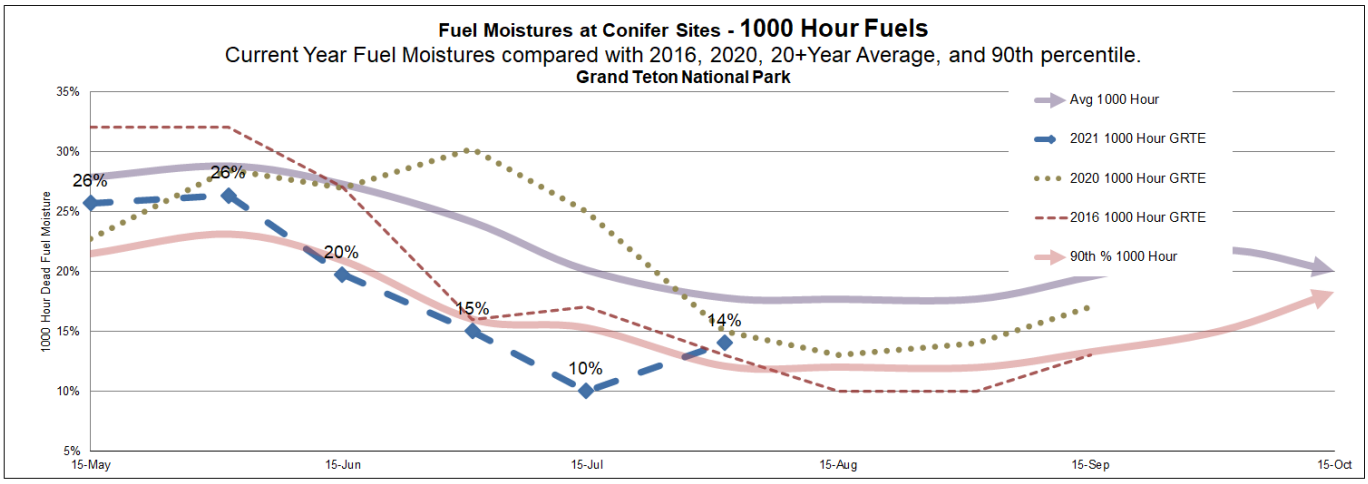
4. Fuel Moisture

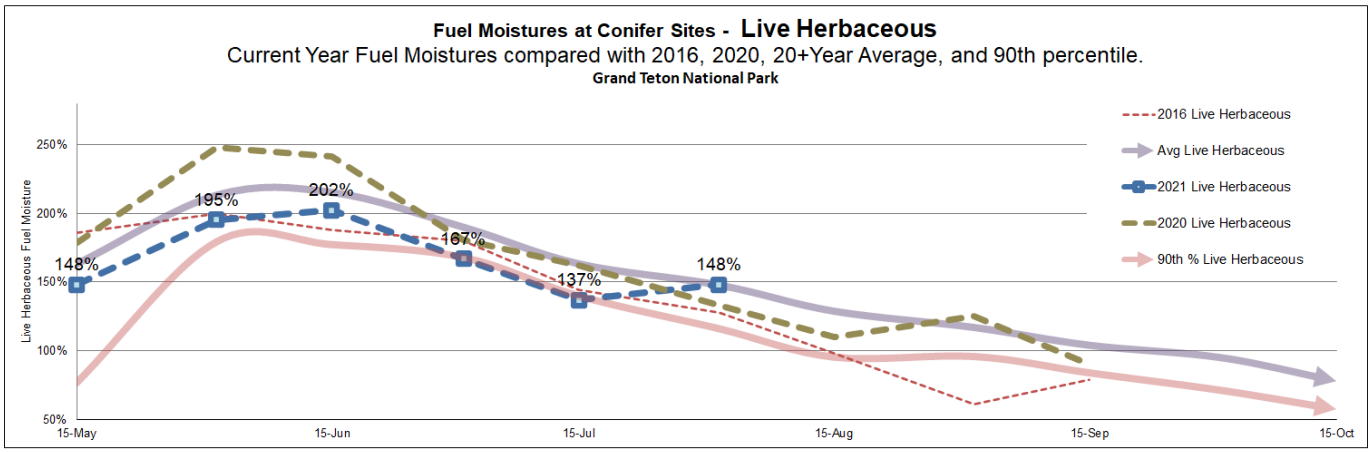
Sampling in Bridger-Teton National Forest and Grand Teton National Park show steady or rising fuel moistures, reflecting the monsoon moisture received later in July. Not all sites were able to be sampled.

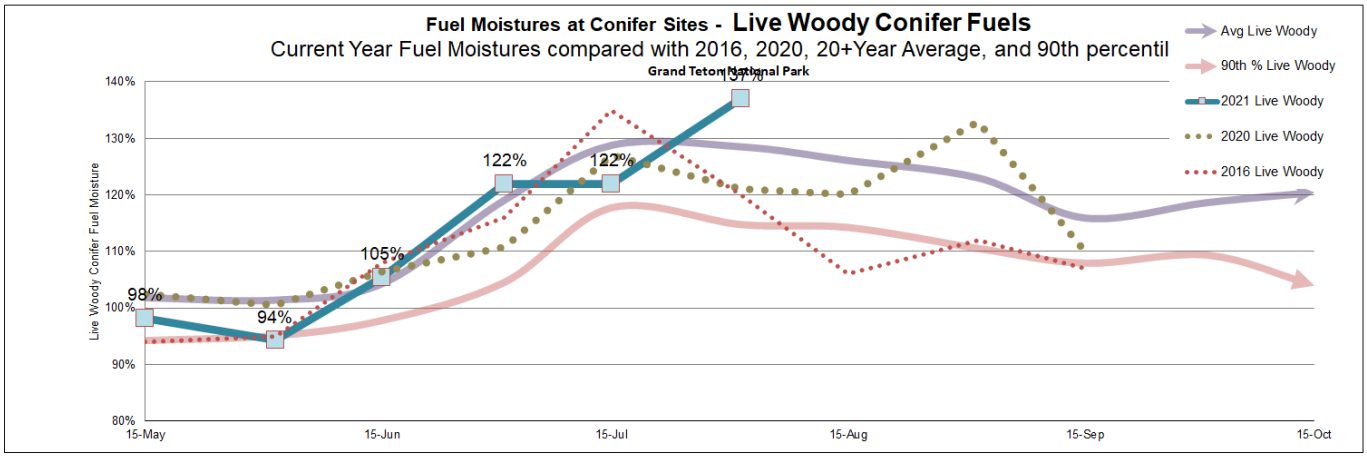
SITE TYPE	FUEL TYPE	East Zone BTNF	West Zone BTNF	North Zone BTNF	Grand Teton NP
Sagebrush	LH Grass				58%
	LH Sagebrush	94%	116%	95%	102%
Conifer	LH Grass			102%	148%
	LW Lodgepole	101%	110%		141%
	LW Fir (Douglas/Subalpine)		SF: 113%	DF:105%	DF: 128%
	1000 Hour Dead	10%	9%	16%	14%

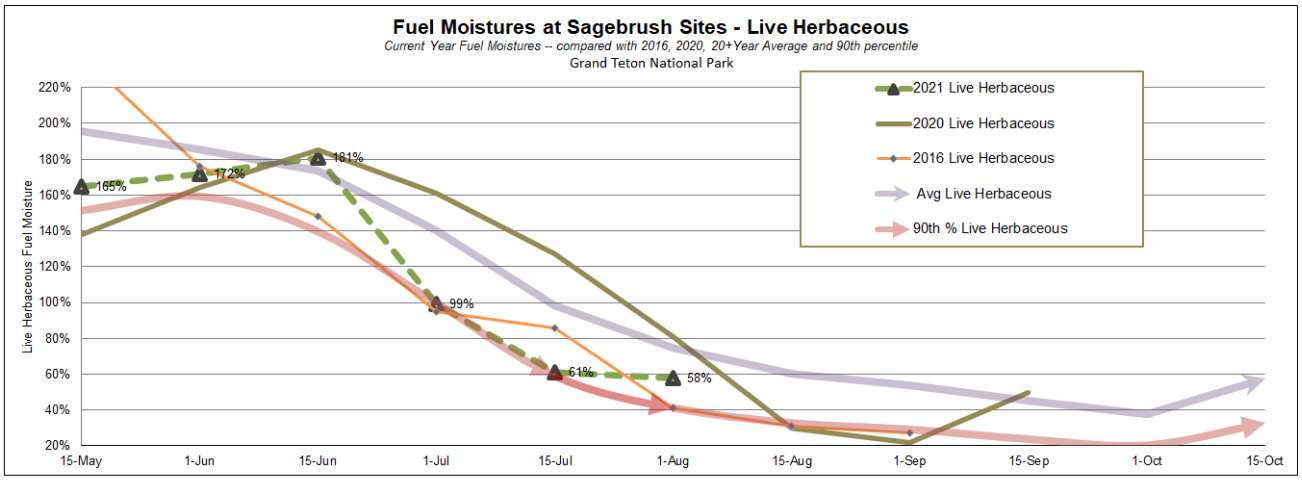
Additional fuel moisture data is available at the National Fuel Moisture Database: [Current Fuel moistures in Bridger-Teton NF and Grand Teton NP](#).

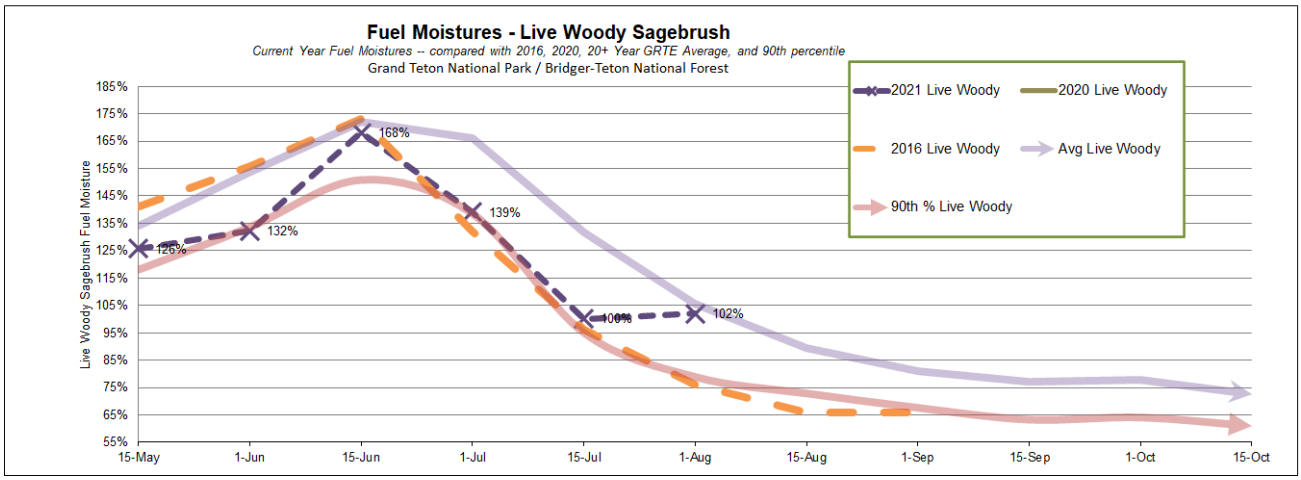
At long-term sampling stations in Grand Teton National Park, a partial sampling of sites reflected the impact of monsoon moisture, with fuel moistures moving closer to normal for August 1.





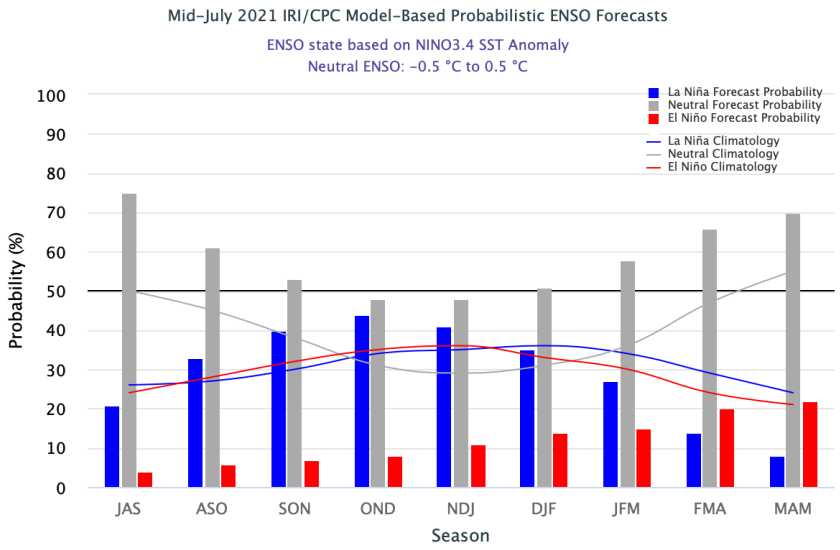






5. El Niño / La Niña / ENSO-Southern Oscillation)

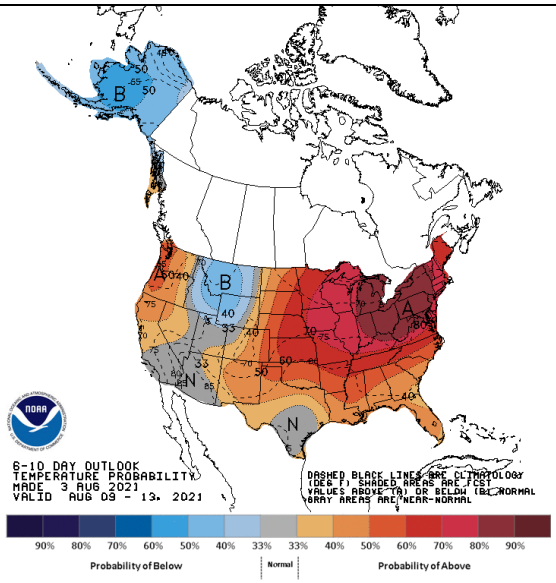
The mid-month ENSO Forecasts (figure linked below, from [IRI – International Research Institute for Climate and Society | Quick Look (columbia.edu)]) tracks *El Niño* (warm) and *La Niña* (cool) events in the tropical Pacific. ENSO neutral conditions are forecast to continue through fall. In some years, this may lead to climatical norms, but this season outlooks call for dry-warm conditions and drought impacts.



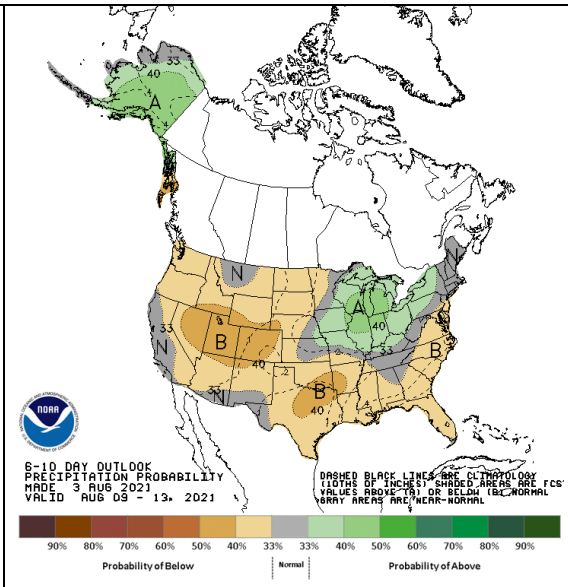
Current *ENSO* neutral conditions will likely continue through summer 2021 (75% chance for ENSO neutral for July-September 2021). By October-November-December 2021, the probabilities trend between neutral and a return to *La Niña* conditions next winter.

6. Temperature and Precipitation Outlooks

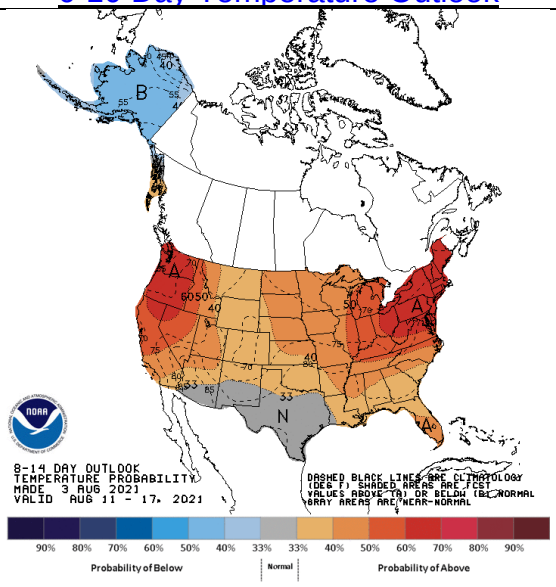
Most outlooks call for warmer temperatures and lower than normal precipitation for the summer and into fall.



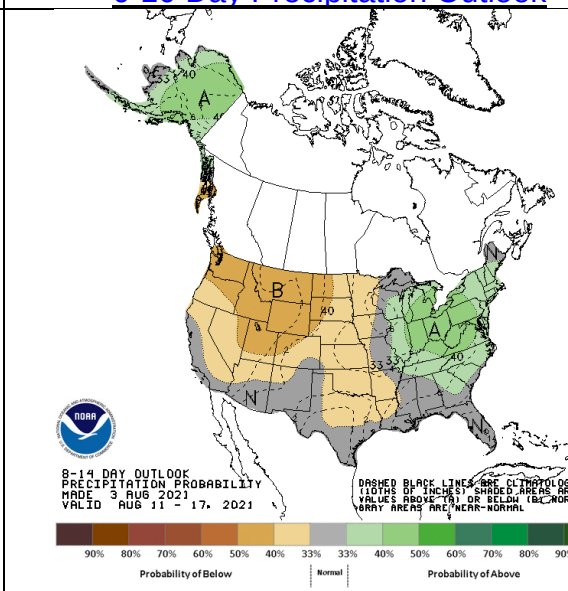
6-10 Day Temperature Outlook



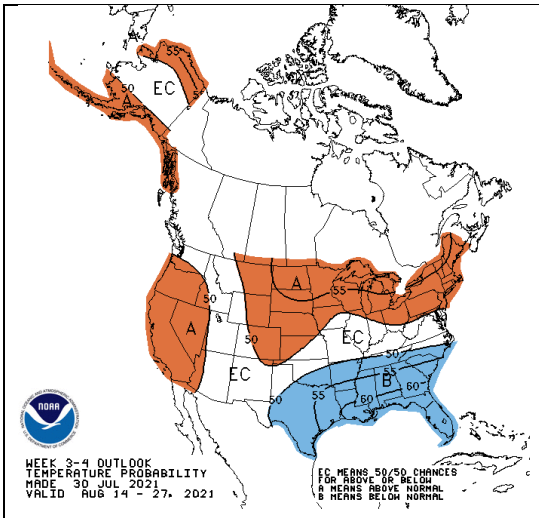
6-10 Day Precipitation Outlook



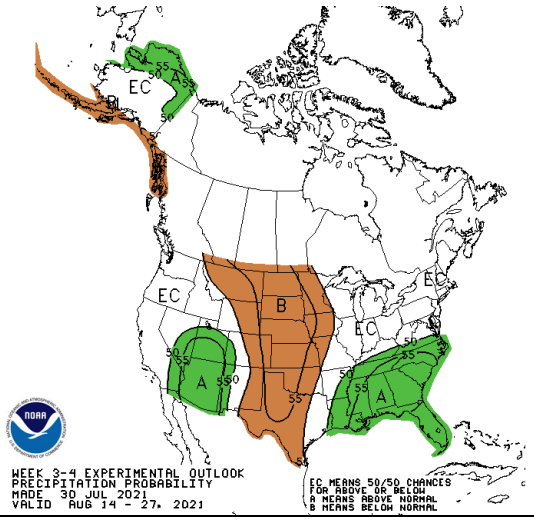
8-14 Day Temperature Outlook



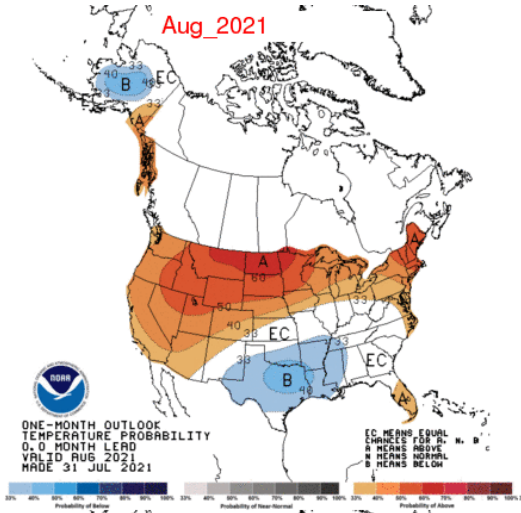
8-14 Day Precipitation Outlook

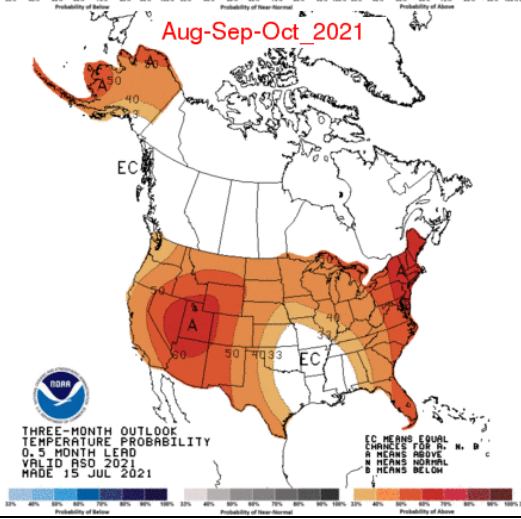


[3-4 Week Temperature Outlook]

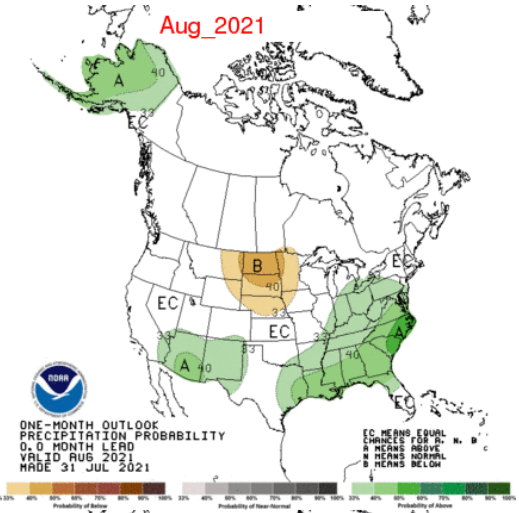


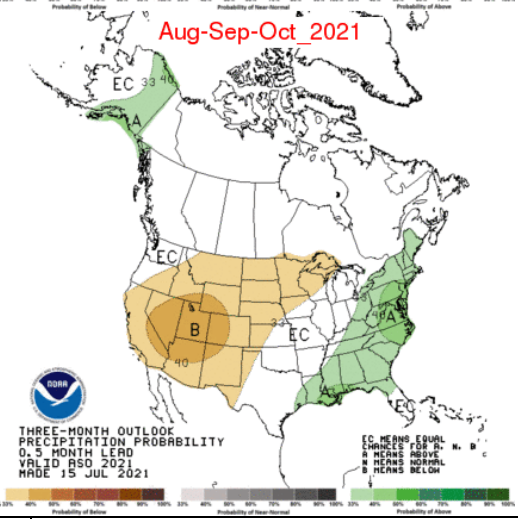
[3-4 Week Precipitation Outlook]





Temperature





Precipitation

GEOGRAPHIC AREA OUTLOOKS

The Teton Area fire zone is within the Great Basin Geographic Area. Fire seasons in our zone track with similar conditions in adjacent areas within the Rocky Mountain and Northern Rockies geographic areas, which converge within the Greater Yellowstone Area (GYA) and share fire activity trends. Outlooks excerpted below support normal fire activity in the Teton Interagency Dispatch area for the remaining fire season.

Excerpts of National/Regional Outlooks from "National Wildland Significant Fire Potential Outlook" (August 1, 2021, NIFC Predictive Services). https://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.

National – Executive Summary (excerpts)

Fire activity continued to increase significantly during July. Significant fire activity moderated in the Southwest, Utah, and Colorado, but increased markedly across the Northwest, northern California, Idaho, and Montana. The national preparedness level increased to five on July 14, the third earliest occurrence since 1990.

Drought expanded across the West with more than 95% of the West in drought. Drought intensified across the northern Intermountain West, but some relief in drought intensity occurred across the Southwest and southern Great Basin. More than half of the West continues to be in the highest two categories of drought. Well above normal temperatures continued across much of the West into the northern Plains, except near the coast and Southwest where temperatures were closer to average. A strong start to the monsoon season was observed in the Southwest, southeast California, southern Great Basin, and southern Colorado with above normal precipitation. However, rainfall was well below average for the remainder of the West into the northern Plains.

Climate and Fire Potential Outlooks

Climate outlooks indicate warmer than normal conditions for much of the CONUS, especially the West, into fall. The northern Intermountain West is likely to have drier than normal conditions in August, expanding to include most of the West during fall. Near normal precipitation is likely with the monsoon in August, which should continue to alleviate drought. However, drought is likely to expand/intensify across the West into fall.

- Above normal significant fire potential is forecast to continue through September for much of the Northwest, Northern Rockies, and northern portions of the Great Basin and Rocky Mountain Geographic Areas. Most of these areas will return to normal fire potential in October and November.
- Most mountains and foothills in California are forecast to have above normal potential through September with areas prone to offshore winds likely to retain above normal potential into October and November in southern California. Leeside locations in Hawaii are likely to have above normal significant fire potential into October.

Great Basin

Above normal fire potential is expected for the Sierra Front as well as northwest Nevada and far western Idaho in August. Below normal fire potential is expected for the far south. Above normal is expected to expand across northern areas in September. Otherwise, normal conditions are expected.

The end of July into early August will feature a sharp and abrupt weather change. The above normal monsoon will continue to surge northwards through much of the Great Basin and into central Idaho and western Wyoming. This could be the biggest monsoonal surge seen in central Idaho to western Wyoming in several years. Widespread, long duration rainfall amounts of one to three inches are possible over a multi-day period ending in early August. Afterward, despite strong high pressure building in with above normal warmth, the airmass is initially expected to retain much of its residual monsoonal moisture. Daytime humidity levels will struggle dropping below 20% for any prolonged period into mid-August. Far southern areas will also see additional moderate to locally heavy rains, where many areas have already seen significant monsoonal rainfall over the past month. A change to drier weather is expected by the latter half of the month. In far northwestern areas, conditions could quickly return to critically dry levels. Longer range guidance shows

warmer and drier than normal conditions continuing into September. Afterwards, a general warming and drying trend should continue into the early fall.

Drier than normal fuel moisture in Idaho, northern Nevada, and northern Utah should quickly increase towards the 50th percentile by early to mid-August. The exception may be far western portions of central Idaho and northwest Nevada, which could continue to see critically dry fuels for most of August. Conversely, there is a minimal chance of any post monsoonal drying in far southern areas. By September, all areas should see an expanding area of critically dry fuels and increasing fire activity that could last into October in some areas.

Great Basin Coordination Center – Seasonal Outlook for August-November 2021 (excerpt).
https://gacc.nifc.gov/gbcc/predictive/docs/monthly.pdf

Fire potential returning to Normal for Western Wyoming. Overall, we have contracted our previous "Above Normal" Large Fire Potential across Idaho to just the far western areas that should get the least precipitation in early August, as well as the most rapid drying. This extends to Northwestern Nevada and the Sierra Front, which will be the first areas to see rapid warming/drying in early August. With the active monsoonal precipitation of July combining with another brief surge expected in early August, we've designated our far southern areas as "Below Normal" Large Fire Potential for August. We then expanded the "Above Normal" Fire Potential in the north a bit in September, but with uncertainties beyond that time frame we continue to forecast "Normal" fire potential Oct-Nov.

CURRENT FIRE ACTIVITY

Teton Interagency Dispatch Center

https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/predictive-services/intelligence

Early-to-mid season wildland fire activity is typically limited to a period after snowmelt and prior to extensive green-up. Fire activity is increasing this season with limited acres burned.

This year to date, 132 abandoned non-escape campfires have been reported compared to **136 in 2020** at this time and **96 in 2019**.

Stage 1 Fire Restrictions went into effect for Bridger-Teton National Forest and Grand Teton National Park on July 1, 2021. Restrictions | Teton Interagency Fire (nifc.gov).

Year-to-Date Fire Activity for Dispatch Center response zones, August 3, 2021.
https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/sites/default/files/site-files/2021%20Fire%20Numbers%20and%20Stats.xlsx

Teton Interagency Fire Management Area Totals	Human Fires	Human Acres	Natural Fires	Natural Acres	RX Fires	RX Acres	Abandoned Non-escape Campfires
	8	3.51	11	290.4	10	1918	132

Selected Sources

- Precipitation Tracking: https://water.weather.gov/precip/
- Precipitation Tracking focused on Snotel sites, Wyoming (beta site)

- Climate Prediction Center, Three-Month Outlooks: https://www.cpc.ncep.noaa.gov/products/predictions/90day/
- Drought.gov Portal / Fire: https://www.drought.gov/drought/data-maps-tools/fire
- Drought.gov Portal / Wyoming: https://www.drought.gov/states/wyoming
- Intermountain West Climate Dashboard: https://wwa.colorado.edu/climate/dashboard.html
- Regional outlooks from "National Wildland Significant Fire Potential Outlook" (first of each month during fire season, NIFC Predictive Services): https://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.
- Great Basin Area – Predictive Services/Outlooks: https://gacc.nifc.gov/gbcc/outlooks.php.
- Rocky Mountain Area – Predictive Services/Outlooks: https://gacc.nifc.gov/rmcc/outlooks1.php.
- Teton Interagency Dispatch: www.tetonfires.com / https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/.

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